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EXAMINER
NATNAEL, PAULOS M

ART UNIT	PAPER NUMBER
2614	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/803,838	SHIRATA ET AL.	
	Examiner	Art Unit	
	Paulos M. Natnael	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims **2, 5-7, 9-13,15,16-21,23-26** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims **2,5,6,9-13,17-21**, the claimed phrases "said first region", "said second region", "said third region", lack antecedent basis.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 9, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Wagensonner et al. U.S. Pat. No. 4,812,903.

Considering claim 9,

a) a component generator for generating components including post-correction output luminance data in first, second and third regions from pre-correction input luminance data and data which determine the boundary value between the first and second regions and the boundary value between the second and third regions, is met by luminance and chrominance generating unit 13, fig.5.

b) a selective compositor for selecting the components generated by said component generator in response to signals for identifying the first, second and third regions, and producing post-correction output luminance data over the entire regions of the input luminance data, is met by luminance and chrominance converting unit 16, fig.5;

Considering claim **17**,

a) a component generator for generating components including post-correction output luminance data in first, second and third regions from pre-correction input luminance data and data which determine the boundary value between the first and second regions and the boundary value between the second and third regions; and,

b) a selective compositor for selecting the components generated by said component generator in response to signals for identifying the first, second and third regions, and producing post-correction output luminance data over the entire regions of the input luminance data;

Regarding claim 17, see rejection of claim 9.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims **1-3,5-6, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagensonner et al. U.S. Pat. No. 4,812,903 .

Considering claim 1,

a) dividing an entire input data region into three of first, second and third regions in order from the low level side thereof, is met by regions 31, 32 and 33, Fig. 7; (see also col. 2, lines 32-35)

b) setting, as an output data characteristic to input data, a trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one, is met by the trapezoidal characteristic formed by the regions or areas 31,32,and 33, FIG.7.

c) correcting digital luminance data in accordance with said trapezoidal characteristic, is met by the trapezoidal characteristic formed by the regions or areas 31,32,and 33, FIG.7;

Except for;

d) the gain is equal to one exactly or approximately, , and a linear portion in said third region where the gain is smaller than one;

Regarding d), Wagensonner et al. doesn't specifically disclose a value such as one (1) or one and half (1.5). However, Wagensonner discloses that the regions or areas 31,32,and 33, FIG.7, show greater gain in the first region (31), than either the second, and the third region, which shows little gain. The third region would be a zero gain. Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Wagensonner et al. by providing specific gain values in order to make clear to the user or to accurately set up the system for luminance correction and measure the gain thereof accurately.

Considering claim **2**, a video processing method comprising the steps of:

a) correcting digital luminance data in accordance with the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where...is met by the trapezoidal characteristic formed by the regions or areas 31,32,and 33, FIG.7.

b) executing gain control or hue control with regard to digital color difference data or other digital color data, is met by FIG. 9 which shows characteristic functions for color difference signals U and V.

Except for;

c) the gain is equal to one exactly or approximately, , and a linear portion in said third region where the gain is smaller than one;

Regarding c), see also rejection of claim 1(d).

Considering claim **3**, a video processing method comprising the steps of

a) separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex, is met by the luminance and chrominance generating unit 13;

b) correcting the separated luminance data in accordance with the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one;

c) executing gain control or hue control with regard to the separated color difference data.

Regarding (b) and (c), see also rejection of claim 1(b-d).

Considering claim **5**, a video processing method comprising the steps of

a) selecting either the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller- than one or the S-shaped characteristic which is nonlinear and continuous as a whole and consists of linear portions in said first and third regions where the gain is smaller than one, and a linear portion in said second region where the gain is greater than one; correcting the digital luminance data in accordance with the selected characteristic; and executing gain control or hue control with regard to digital color difference data or other digital color data.

Regarding claim 5, see rejection of claim 3;

Considering claim **6**, a video processing method comprising the steps of

a) separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex;

b) selecting either the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain 51 is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is

smaller than one or the S-shaped characteristic which is nonlinear and continuous as a whole and consists of linear portions in said first and third regions where the gain is smaller than one, and a linear portion in said second region where the gain is greater than one;

c) correcting the separated luminance data in accordance with the selected characteristic; and

d) executing gain control or hue control with regard to the separated color difference data.

Regarding a)-c), see rejection of claim 1.

Regarding d), see rejection of claim 3 (c).

Considering claim **10**, a video processing device comprising:

a) a data separator circuit for separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex, is met by luminance and chrominance generating unit 13, fig.5.

b) a luminance corrector circuit for correcting the luminance data separated by said data separator circuit, in accordance with the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second ... is met by luminance and chrominance converting unit 16, fig.5;

Except for;

c) where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one;

Regarding c), see also rejection of claim 1(d).

6. Claims **4, 7,8, 11-16,18-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagensonner et al. U.S. Pat. No. 4,812,903 in view of Lee, U.S. Pat. No. 5,546,134.

Considering claim **4, a** video processing method comprising the steps of

a) dividing an entire input data region into three of first, second and third regions in order from the low level side thereof, is met by regions 31, 32 and 33, Fig. 7; (see also col. 2, lines 32-35);

b) setting, as an output data characteristic to input data, the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one, is met by the trapezoidal characteristic formed by the regions or areas 31,32,and 33, FIG.7;

d) selecting either said trapezoidal characteristic or said S-shaped characteristic, is inherent, because the system would choose one or the other according to the user's desire.

e) correcting digital luminance data in accordance with the selected characteristic, is met by the trapezoidal characteristic formed by the regions or areas 31,32,and 33, FIG.7;

Except for;

c) setting, as another output data characteristic, an S-shaped characteristic 'which is nonlinear and continuous as a whole and consists of linear portions in said first and third regions where the gain is smaller than one, and a linear portion in said second region where the gain is greater than one;

Regarding c), Wagensonner et al. do not disclose the s-shaped characteristic. However the s-shaped nonlinear characteristic is well known in the art.

In that regard, Lee discloses a video brightness/contrast enhancement in input-output characteristics (fig.3) and dividing a range of the average brightness level in a video input signal into a plurality of areas (fig.4, see also col. 2, lines 32-35).

Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Wagensonner by providing an S-shaped characteristic (fig.3) of Lee, in order to give the user a greater flexibility of choice to utilize either the trapezoidal or s-shaped methods.

Considering claim **7**, the video processing method according to claim 1, wherein said trapezoidal characteristic equalizes the width of the first region and that of the third region to each other, is met by the first and third regions (figs. 7 and 8)

Considering claim 8, the video processing method according to claim 4, wherein said S-shaped characteristic equalizes the sum of the widths of the first and third regions to the width of the second region.

Regarding claim 8, see rejection of claim 4.

Considering claim **11**, a video processing device comprising:

a) a data separator circuit for separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex, is met by luminance and chrominance generating unit 13, fig.5.

b) a luminance corrector circuit for correcting the luminance data separated by said data separator circuit, in accordance with either characteristic selected out of the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region, ... is met by luminance and chrominance converting unit 16, fig.5;

Except for;

c) where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one;

d) the S-shaped characteristic which is nonlinear and continuous as a whole and consists of linear portions in said first and third regions where the gain is smaller than one, and a linear portion in said second region where the gain is greater than one.

Regarding c), Wagensonner et al. doesn't specifically disclose a value such as one (1) or one and half (1.5). However, Wagensonner discloses that the regions or areas 31,32,and 33, FIG.7, show greater gain in the first region (31), than either the second, and the third region, which shows little gain. The third region would be a zero gain. Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Wagensonner et al. by providing specific gain values in order to make clear to the user or to accurately set up the system for luminance correction and measure the gain thereof accurately.

Regarding d), see rejection of claim 4 (c);

Considering claim **12**, a video processing device comprising:

a) a data separator circuit for separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex, is met by luminance and chrominance generating unit 13, fig.5.

b) a luminance corrector circuit for correcting the luminance data separated by said data separator circuit, in accordance with the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region, ... is met by luminance and chrominance converting unit 16, fig.5;

c) a control processing circuit for executing gain control or hue control with regard to the color difference data separated by said data separator circuit.

d) where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one.

Regarding (c), see rejection of claim 11(c).

Regarding d), see rejection of claim 4 (c);

Considering claim **13**,

a) a data separator circuit for separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex;

b) a luminance corrector circuit for correcting the luminance data separated by said data separator circuit, in accordance with either characteristic selected out of the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said

second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one, ... is met by luminance and chrominance converting unit 16, fig.5;

c)the S-shaped characteristic which is nonlinear and continuous as a whole and consists of linear portions in said first and third regions where the gain is smaller than one, and a linear portion in said second region where the gain is greater than one;

d) a control processing circuit for executing gain control or hue control with regard to the color difference data separated by said data separator circuit,

Regarding c), see rejection of claim 4(c).

Regarding d), see rejection of claim 1(c).

Considering claim **14**, the video processing device according to claim 10, further comprising a data compositor circuit for compositing the output luminance data of said luminance corrector circuit and the output color difference data of said data separator circuit or said control processing circuit.

Regarding claim 14, see rejection of claim 13 (b).

Considering claim **15**, a data compositor circuit for compositing the output luminance data of said luminance corrector circuit and the output color difference data of said data

separator circuit or said control processing circuit, is met by the luminance and chrominance converting unit 16, fig.5;

Considering claim **16**, a data compositor circuit for compositing the output luminance data of said luminance corrector circuit and the output color difference data of said data separator circuit or said control processing circuit.

Regarding claim 16, see rejection of claim 15.

Considering claim **18**,

a) a data separator circuit for separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined 'to be multiplex; and

b) a luminance corrector circuit for correcting the luminance data separated by said data separator circuit, in accordance with the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one.

Regarding claim 18, see rejection of claim 13;

Considering claim 19,

a) a data separator circuit for separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex; and

b) a luminance corrector circuit for correcting the luminance data separated by said data separator circuit, in accordance with either characteristic selected out of the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one and the S-shaped characteristic which is nonlinear and continuous as a whole and consists of linear portions in said first and third regions where the gain is smaller than one, and a linear portion in said second region where the gain is greater than one.

Regarding claim 19, see rejection of claim 13;

Considering claim **20,**

a) a data separator circuit for separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex; a luminance corrector circuit for correcting the luminance data separated by said data separator circuit, in accordance with the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear

portion in said third region where the gain is smaller than one; and a control processing circuit for executing gain control or hue control with regard to the color difference data separated by said data separator circuit.

Regarding claim 20, see rejection of claim 13;

Considering claim 21,

a) a data separator circuit for separating luminance data and color difference data from digital video data which are composed of the luminance data and the color difference data combined to be multiplex;

b) a luminance corrector circuit for correcting the luminance data separated by said data separator circuit, in accordance with either characteristic selected out of the trapezoidal characteristic which is nonlinear and continuous as a whole and consists of a linear portion in said first region where the gain is greater than one, a linear portion in said second region where the gain is equal to one exactly or approximately, and a linear portion in said third region where the gain is smaller than one and the S-shaped. characteristic which is nonlinear and continuous as a whole and consists of linear portions in said first and third regions where the gain is smaller than one, and a linear portion in said second region where the gain is greater than one; and

a control processing circuit for executing gain control or hue control with regard to the color difference data separated by said data separator circuit.

Regarding claim 21, see rejection of claim 13;

Considering claim 22,

a) a memory capable of holding the stored content without any power supply or with a backup power supply, is met by memory 5, fig.1;

Except for;

b) a controller for writing a control state relative to video data as a control parameter in said memory correspondingly to video identification information which specifies the video, or to characteristic descriptive information which describes the image characteristic, wherein, when the video data are to be outputted, said controller reads out the control parameter from said memory if the video identification information or the characteristic descriptive information relative to the output video data is stored in said memory and also if the control parameter corresponding to such information is stored therein, and said controller sets the control state for the output video data in accordance with the control parameter thus read out.

Regarding b), Wagensonner et al. does not specifically disclose a controller. However, Examiner takes Official Notice here in that controllers are well known in the art and it would have been obvious to the skilled in the art at the time the invention was to modify the system of Wagensonner et al. by providing a microprocessor or a microcontroller to send control signals for writing to and reading from the memory 5 and generally control the overall function of the system, so that the system functions efficiently and reliably.

Considering claim 23, see rejection of claim 22.

Considering claim 24, see rejection of claim 22.

Considering claim 25, see rejection of claim 22.

Considering claim 26, see rejection of claim 22.

Considering claim 23, see rejection of claim 22.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fuchsberger, U.S. pat. No. 4,831,434 discloses method of correcting color saturation in electronic image processing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 6:30am -3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

MICHAEL H. LEE
PRIMARY EXAMINER

Paulos Natnael
August 8, 2003